

حمل الآن

مجاناً وحصرياً

المراجعة رقم (1)

اختبار شهر ابريل



Lesson 1

» Steps to Solve a Problem:

① Construct a Hypothesis:

Hypothesis: It is an educated guess about how the problem happened.

② Test the hypothesis:

Do not try any test that may damage your device.

③ Learning from Mistakes:

If the test does not work, learn from mistakes to make a better hypothesis next time.

» Breaking Down Problems:

If the problem is complicated, break down the problem into small sections.

Then, solve each part step by step.

Note: If you are working in a group, give each person one small part to solve.

Lesson 2

» Microsoft 365's bundle includes:

① **PowerPoint:** It is used to create attractive slides (presentations).

② **Word:** It is used for writing text and simple posters.

③ **Publisher:** It is a professional program used to design posters and flyers.

Note: Your device must be **updated** to download and run the programs.

»» Digital Concepts to Consider:

- ① **Margin:** It is the empty space around the edge of a poster or billboard.
 - Don't crowd the edges.
 - Keep a fixed margin of 2.5 cm.
- ② **Font Type and Size:** Choose a font size that is easy to read.
 - Simple fonts are better than complicated fonts.
- ③ **Colors:** It's preferable not to add more than **three** colors.
 - Choose color combinations that match.
 - Take into consideration the color of the background when choosing the font color.
- ④ **Images:** Use images that match your content.
 - Use clear, high-quality, and appropriate images.

Lesson 3

»» **Algorithm:** It is a set of clear instructions and a series of organized steps to solve a particular problem or do a specific task (such as: Add Two Numbers).

»» Main Properties of a Good Algorithm:

- **Definiteness:** Every step should be clear and not confusing.
- **Input:** It should accept zero or more inputs.
- **Output:** It should produce at least one output (the solution).
- **Finiteness:** The algorithm should stop after a limited number of steps.
- **Effectiveness:** Every step should be able and simple to perform.

»» Algorithms and Search Engines:

- Every time you type keywords, the search engine uses algorithms to provide the most relevant results.
- If you use a search engine to find directions to a place, the engine will use the database of names and information from digital maps to give you the results.

Lesson 4

» **Coding:** It is the writing of multiple algorithms to make a complete program.

- Algorithms are the base of coding.
- Online animations, movies, and video games are created using **coding**.
- Computers and applications use **algorithms** to perform specific tasks.
- Algorithms are the base of coding.
- You can learn coding and create mazes through websites like **Code.org**.
- Coding teaches you how to think logically to solve problems.
- When you code, you give clear instructions to the computer.

Lesson 5

- There are many applications that use **block-based coding**.

Scratch	• It is a learning environment that uses a programming language to teach coding for kids and beginners. • It is a block-based interface.
Tynker	• It is a learning environment for kids to learn coding. • It is a block-based interface. • It supports coding languages like Python and JavaScript.
Blockly	• It is an open-source visual programming language. • It is a block-based interface. • It can be integrated with Python and JavaScript.

» **Exploring Scratch:**

- Scratch uses **blocks** instead of complex codes, where Blocks are Commands.

» **Script:** It is a group of connected blocks that gives instructions to a **Sprite**.

- » **Sprite:** It is the character or object on the screen (the Cat Sprite is the default).
- » **Stage Area:** It is the display screen; It's the place where your project appears.
- » **Blocks Area:** It is a library that contains all the colored commands.
- » **Scripts Area:** It is your workspace; you can drag blocks and assemble them to create commands.
- » **Next Costume:** It is a block used to change the sprite's look to make it appear like it is walking (animation).
- » **Events category (yellow)** —————> When green flag clicked
- » **From the motion category (blue):** —————> Move 100 steps
- » **Run:** Click the green flag to watch the cat move.

Lesson 6

- » **Graphic Art:** It is the creating and editing of digital pictures and drawings.
- » **Microsoft Paint:**

It is a popular program to create drawings or edit pictures.

You can open Paint from the Start menu >>>> Accessories.

Using the Menu Bar and Toolbox in Paint, you can use tools for:

- ① **Cropping:** Choose the part of the picture you want and remove the rest.
- ② **Adding Text:** Click on the bottom right corner of the photo.
Drag your mouse to the right to have enough white space to write.
- ③ **Changing Colors and Size:** Fill colors using color options.
Change the size of the picture or its direction.

- » **Microsoft Word:** It offers graphic tools such as Shapes, Icons, 3D Models, and SmartArt.

- » **How to find tools:** Go to the Insert tab in the Menu Bar.

1

1

- (القاهرة - النزهة 2023)

2

- d. Java

- 3 is an open-source visual programming language that can be integrated with other languages like Python.
a. Movie Maker b. Blockly c. Publisher d. Paint
- 4 Make sure to choose a font size that is when designing a poster.
a. very small b. readable c. very large d. tiny
- 5  What is the term for a group of connected blocks that give commands to a sprite?
a. Script b. Block c. Sprite d. Command
- 6 An algorithm should produce at least one, which is the solution.
a. input b. keyword c. output d. step
- 7 A set of step-by-step instructions to accomplish a task is called a/an
a. algorithm b. sprite c. margin d. font

Model Exam

2

1 Put (✓) or (x):

- 1 You must break down the problem into small sections to solve them in steps. ()
- 2 Be sure to choose a font size to your poster or billboard that is hard to read. ()
- 3 Coding is used in animation, movies, and online games you have played. ()
- 4 Microsoft Excel is used to create presentations that include text and special effects. ()
- 5  An algorithm is a set of random instructions. ()
- 6 You should not test a hypothesis that might be dangerous. ()
- 7 Scratch is a visual programming language for beginners. ()
- 8 A sprite is the area where you write codes in Scratch. ()

Model Exam

3

1 Put (✓) or (X):

- 1 A margin is the space left around the edges of your poster or billboard. ()
- 2 Coding is the writing of multiple algorithms to make a complete program. ()
- 3 Microsoft Paint allows you to design an image and save it. ()
- 4 You cannot add new sounds in Scratch. ()
- 5 Algorithms are used in our daily life, like cooking or cleaning. ()
- 6 Microsoft Publisher is used only for writing simple text. ()
- 7 In Scratch, you drag and drop blocks to create codes. ()
- 8 Simple fonts are better for posters than decorative ones. ()

2 Choose the correct answer:

- 1 When choosing colors, you should consider the color of
 a. your computer b. only the font
 c. your background d. the mouse
- 2 is/are used to create attractive slides easily and quickly.
 a. Microsoft PowerPoint b. Microsoft Word
 c. Microsoft 365 d. All of them
- 3 To start a sequence of codes in Scratch, when the flag is clicked, choose blocks first.
 a. Motion b. Events c. Control d. Operators
- 4 Graphic art focuses on
 a. writing
 b. creating and editing digital images
 c. math d. hardware

- 4  When you have a big task, how do you make it easier?
 - a. Leave it as it is.
 - b. Break it into smaller tasks.
 - c. Ask someone else to solve it completely.
 - d. Get distracted.
- 5 To make a Sprite turn right, you use a Block from the _____ section.
 - a. Motion
 - b. Looks
 - c. Events
 - d. Sound
- 6 A "Sprite" is most commonly used with the _____ program.
 - a. Word
 - b. Scratch
 - c. Excel
 - d. Paint
- 7 When your hypothesis test fails, this means your hypothesis was _____.
 - a. correct
 - b. successful
 - c. incorrect
 - d. perfect

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجاناً وحصرياً

المراجعة رقم (2)

اختبار شهر ابريل



Unit 4: My Digital Project

Lesson 1: Solving Digital Problems

You may face small or large problems when using technology.

Sometimes solving them seems difficult, but by following organized steps, problem-solving becomes easier.

Steps to Solve Digital Problems:

Solving problems in technology requires logical thinking and includes the following steps:

1. Formulating a Hypothesis:

- Make a scientific guess or a preliminary explanation about how the problem happened.
- This guess is called a Hypothesis, and it is the starting point you can test.

2. Testing the Hypothesis:

- Do not risk trying anything that might put your device at risk.
- The test must be safe and well-thought-out.

3. Learning from Errors:

- If your test fails, think: What went wrong? What did I learn?
- You must learn from errors and build a new, more accurate hypothesis.

Breaking Down Problems into Small Parts:

- Divide a large problem into small parts, then solve each part gradually.
- This method is used for large and complex technical problems, such as:
 - Internet connection issues.
 - An application not working.
- If you have a group of people helping you, a small part can be assigned to each person to solve separately.

 Real-Life Example:

Organizing a class trip might seem difficult, but breaking it down into small tasks makes it much easier:

1. Deciding the destination.
2. Setting the date.
3. Asking the relevant authority about the price.

Note: When breaking down a large technological problem, start by solving the parts you can do yourself, step by step, until the major problem is solved.

I. True (T) or False (F):

1. A hypothesis is a scientific guess about how a problem happened. ()
2. You should test any hypothesis even if it puts your device at risk. ()
3. Dividing a large problem into small parts makes it harder to solve. ()
4. Solving technical problems requires logical thinking. ()
5. If a hypothesis test fails, you should give up and stop trying. ()
6. Breaking down problems is helpful when working in a group. ()
7. Organizing a class trip is an example of a task that can be subdivided. ()
8. Testing a hypothesis must be a safe and studied process. ()

II. Complete the following:

1. A _____ is a preliminary explanation of a problem that can be tested.
(A) Solution (B) Hypothesis (C) Result (D) Problem
2. When a problem is too complex, you should _____ it into smaller parts. (A) Ignore (B) Delete (C) Divide (D) Increase
3. Solving the parts you can do _____ is the first step in solving a big problem. (A) With help (B) Alone (C) Never (D) Randomly
4. If your hypothesis test fails, you should _____.
(A) Break the device (B) Build a new hypothesis
(C) Stop using technology (D) Cry
5. Testing a hypothesis should never _____ your computer or tablet. (A) Help (B) Upgrade (C) Endanger (D) Clean
6. Identifying the destination is a small _____ when organizing a class trip. (A) Problem (B) Hypothesis (C) Task (D) Error
7. To solve an internet connection issue, we use _____ thinking.
(A) Random (B) Logical (C) Slow (D) No

I. True (T) or False (F):

1. Logical thinking is not necessary for solving digital problems. ()
2. Learning from errors helps in building a more accurate hypothesis. ()
3. A large problem should be solved all at once, not in parts. ()
4. A hypothesis is the starting point for solving any digital issue. ()
5. You can assign small parts of a problem to different people in a group. ()
6. Safety is the most important factor when testing a hypothesis. ()
7. You should only solve the easy parts of a problem and ignore the rest. ()
8. Technology problems can always be solved by following organized steps. ()

II. Complete the following:

1. Dividing a problem into small parts is a method used for _____ problems. (A) Easy (B) Simple (C) Complex (D) Short
2. After making a guess, the next step is _____ the hypothesis. (A) Deleting (B) Testing (C) Forgetting (D) Printing
3. A _____ is a scientific guess to explain why a program is not working. (A) Goal (B) Task (C) Hypothesis (D) Fact
4. If the first hypothesis is wrong, we must _____ from our mistake. (A) Run (B) Learn (C) Hide (D) Sleep
5. When working as a team, each person can solve a _____ of the problem. (A) Whole (B) Part (C) Hypothesis (D) Device
6. An example of a digital problem is _____.
(A) A broken chair (B) An app not working (C) A lost book (D) A dirty desk
7. Testing a hypothesis must be _____ to avoid damaging the hardware. (A) Dangerous (B) Safe (C) Random (D) Fast

I. True (T) or False (F):

1. A hypothesis is a final solution that does not need testing. ()
2. Breaking down a task like "setting a trip date" makes the big task easier. ()
3. You must always risk your device to find a solution quickly. ()
4. Failure in testing a hypothesis provides information for a new one. ()
5. Large digital problems require a step-by-step approach. ()
6. A scientific guess is called a hypothesis. ()
7. You should start with the most difficult part of a problem first. ()
8. Logical thinking helps in organizing the steps of problem-solving. ()

II. Complete the following:

1. To solve a big technical problem, we should follow _____ steps.
(A) Random (B) Organized (C) Confusing (D) Secret
2. If your hypothesis test was _____, you need to think of a new one.
(A) Successful (B) Unsuccessful (C) Easy (D) Fast
3. Making a scientific guess is the _____ step in solving a digital problem. (A) Last (B) First (C) Only (D) Optional
4. _____ a problem into parts helps you focus on one thing at a time.
(A) Joining (B) Deleting (C) Splitting (D) Ignoring
5. A _____ is something you can test to see if it solves the issue.
(A) Screen (B) Hypothesis (C) Mouse (D) Keyboard
6. When solving a problem, we should use _____.
(A) Guessing only (B) Logical thinking (C) Anger (D) Luck
7. Asking about the price of a trip is part of _____ a big task.
(A) Avoiding (B) Subdividing (C) Failing (D) Testing

Lesson 2: Presenting Information

When we want to present information or announce an idea attractively, we use digital tools to design posters or billboards. Goal: To learn the tools and the principles of good design.

Digital Tools for Presenting Information:

The Microsoft 365 suite offers excellent options for design, posters, and billboards. Examples of Programs:

1. **PowerPoint:** Used to design easy and fast presentation slides.
2. **Microsoft Word:** Used for writing text and can be used for simple poster designs.
3. **Microsoft Publisher:** A professional program for designing posters, brochures, and advertisements in an organized way. *Note: To access these, you must have Microsoft 365 on your device and ensure the device is updated.*

Digital Design Concepts to Consider:

When designing a poster, you must consider these elements to make it attractive and easy to read:

1. **Margins:**
 - The empty space around the edges of the poster or billboard.
 - You should leave a consistent margin (e.g., 2.5 cm).
 - If the edges are too crowded, the design looks unattractive.
2. **Font Type and Size:**
 - Everyone should be able to read the information easily.
 - Avoid complex fonts that distract the reader. Simplicity is best.
3. **Colors:**
 - Colors help deliver the message and attract attention.
 - It is preferable to use fewer than three colors in a poster.
 - Consider the background color when choosing the font color.

4. **Images:**

- Images must match the content.

- Use clear, high-quality images relevant to the topic.



I. True (T) or False (F):

1. Microsoft 365 suite includes programs like Word and PowerPoint. ()
2. Margins are the crowded spaces in the middle of a poster. ()
3. You should use as many colors as possible to make a poster attractive. ()
4. Microsoft Publisher is a professional tool for designing brochures. ()
5. Simple fonts are better for posters because they are easy to read. ()
6. Images in a design do not necessarily have to match the content. ()
7. Leaving a margin of 2.5 cm helps make the design look organized. ()
8. PowerPoint is specifically used for writing long books only. ()

II. Complete the following:

1. The _____ is the empty space around the edges of your design.
(A) Color (B) Margin (C) Image (D) Font
2. It is recommended to use fewer than _____ colors in a single poster.
(A) Ten (B) Five (C) Three (D) Seven
3. _____ is an excellent program for creating presentation slides.
(A) Excel (B) PowerPoint (C) Paint (D) Calculator
4. To make your poster easy to read, you should avoid _____ fonts.
(A) Simple (B) Clear (C) Complex (D) Large
5. When choosing a font color, you must also consider the _____ color.
(A) Laptop (B) Room (C) Background (D) Printer
6. Microsoft _____ is a professional program used for designing advertisements. (A) Word (B) Publisher (C) PowerPoint (D) Chrome
7. Images used in a digital poster should be _____ and high quality.
(A) Blurry (B) Small (C) Clear (D) Dark

I. True (T) or False (F):

1. Using too many colors can distract the person looking at the poster. ()
2. Word can be used for writing text and designing simple posters. ()
3. A poster looks better when the edges are crowded with text. ()
4. Font size should be large enough for everyone to read easily. ()
5. You must update your device to use the latest Microsoft 365 tools. ()
6. The background color has no effect on how the text appears. ()
7. High-quality images make the design look more professional. ()
8. Margins should be inconsistent and vary on every side. ()

II. Complete the following:

1. Microsoft _____ is primarily used for word processing and writing.
(A) PowerPoint (B) Publisher (C) Word (D) Excel
2. A good margin size to leave around your design is _____.
(A) 10 cm (B) 0 cm (C) 2.5 cm (D) 50 cm
3. Using _____ makes the information on a poster easier to understand.
(A) Complex fonts (B) Relevant images (C) Crowded edges (D) Dark colors
4. Presentation slides are best designed using _____.
(A) Word (B) PowerPoint (C) Publisher (D) WhatsApp
5. Designers use _____ to attract attention and deliver a message.
(A) Noises (B) Colors (C) Viruses (D) Passwords
6. If you want to design a professional brochure, the best tool is _____.
(A) Publisher (B) Calculator (C) Notepad (D) Media Player
7. Simplicity in _____ makes the poster look clean and professional.
(A) Problems (B) Design (C) Errors (D) Costs

I. True (T) or False (F):

1. Microsoft 365 is a set of digital tools for presenting information. ()
2. Complex fonts help people read the information faster. ()
3. Images should be relevant to the topic of the poster. ()
4. PowerPoint is a professional software for designing newspapers. ()
5. Crowded designs are usually unattractive to the eye. ()
6. You should consider the font color relative to the background color. ()
7. Posters and billboards are used to announce ideas attractively. ()
8. Designing a poster does not require leaving any empty spaces. ()

II. Complete the following:

1. To present an idea attractively, you can design a _____.
(A) Password (B) Poster (C) Keyboard (D) Mouse
2. Choosing a _____ font is a key rule for a successful design.
(A) Hidden (B) Simple (C) Small (D) Messy
3. The space around the edges of a billboard is called the _____.
(A) Border (B) Frame (C) Margin (D) Center
4. To create a series of slides, use _____.
(A) Microsoft Word (B) Microsoft PowerPoint (C) Microsoft Paint (D) Google
5. It is best to use _____ colors in your design to keep it simple.
(A) Many (B) Limited (C) Glowing (D) Random
6. You can design a professional flyer using _____.
(A) Publisher (B) Excel (C) Zoom (D) YouTube
7. When you add a photo to a poster, it should be _____.
(A) Large and blurry (B) Related to the topic
(C) Completely black (D) From a game

Lesson 3: Algorithms

Did you know that everything you do in your day is a series of steps? This series is called an Algorithm.

✂ □ *Definition of an Algorithm:*

An Algorithm is a finite set of clear instructions and sequential, organized steps used to:

- Solve a specific problem.
- Accomplish a specific task.

✂ Illustrative Example: Addition Algorithm

1. Start.
2. Enter the first number (A).
3. Enter the second number (B).
4. Calculate the sum: $C = A + B$.
5. Display the result (C).
6. End.

✓ *Basic Characteristics of an Algorithm:*

A good algorithm must have the following:

1. Clarity and Precision: Each step must be clear and unambiguous.
2. Inputs: It must accept zero or more inputs.
3. Outputs: It must produce at least one output that represents the solution.
4. Finiteness: The algorithm must stop after a limited (finite) number of steps.
5. Effectiveness: Each step must be practically executable.

 Algorithms and Search Engines:

Computers use algorithms to perform specific tasks, such as search engines.

 How Search Engines Use Algorithms:

1. You type keywords into the search engine.
2. The engine uses smart algorithms to provide the most relevant results to your search topic.

Illustrative Example:

If you use a search engine to find directions to a place, the engine uses a database of names and information in digital maps to provide the results.

 Search Accuracy:

- It is important to choose the correct words when collecting information.
- If your phrasing is not precise, the search engine's algorithm might not be perfectly accurate in providing results.

I. True (T) or False (F):

1. An algorithm is a series of organized steps to solve a problem. ()
2. Algorithms must go on forever and never stop. ()
3. Search engines use smart algorithms to find relevant results. ()
4. Every step in an algorithm should be clear and precise. ()
5. An algorithm can produce many results but no output at all. ()
6. Choosing incorrect keywords helps algorithms work better. ()
7. Digital maps use databases to provide directions via algorithms. ()
8. "Calculating the sum" is a step in an addition algorithm. ()

II. Complete the following:

1. A _____ is a set of clear instructions to complete a task.
(A) Digital map (B) Algorithm (C) Keyword (D) Result
2. To get accurate search results, you must use precise _____.
(A) Passwords (B) Keywords (C) Images (D) Algorithms
3. One characteristic of an algorithm is _____, meaning it must have a final step.
(A) Effectiveness (B) Finiteness (C) Clarity (D) Input
4. Search engines use algorithms to find information in a _____.
(A) Printer (B) Database (C) Mouse (D) Camera
5. In an addition algorithm, the final result is called the _____.
(A) Input (B) Process (C) Output (D) Start
6. Each step in a good algorithm must be _____ to perform.
(A) Impossible (B) Executable (C) Random (D) Hidden
7. Algorithms are used by _____ to help us find locations on maps.
(A) Computers (B) Books (C) Pens (D) Radios

I. True (T) or False (F):

1. Computers use algorithms only for playing music. ()
2. A good algorithm should be ambiguous and unclear. ()
3. "Inputting numbers" is the first step after starting an addition algorithm. ()
4. If your search keywords are not precise, results might be inaccurate. ()
5. Finiteness means the algorithm stops after a limited number of steps. ()
6. An algorithm must have at least one output. ()
7. Daily routines, like making tea, can be described as algorithms. ()
8. Smart algorithms are not used in digital search engines. ()

II. Complete the following:

1. Search engines provide results that are _____ to your keywords.
(A) Irrelevant (B) Relevant (C) Opposite (D) Random
2. An algorithm must accept zero or more _____ to start.
(A) Outputs (B) Results (C) Inputs (D) Closings
3. The step "Display the result" represents the _____ in an algorithm.
(A) Input (B) Starting point (C) Output (D) Calculation
4. Using _____ phrasing makes the search algorithm more accurate.
(A) Precise (B) Vague (C) Long (D) Wrong
5. A _____ set of instructions means the algorithm has an end.
(A) Infinite (B) Limited (C) Large (D) Broken
6. We use _____ to solve a specific mathematical problem.
(A) Passwords (B) Algorithms (C) Emails (D) Chat rooms
7. If you search for a place, the engine uses _____ information.
(A) Guessing (B) Digital map (C) No (D) Paper

I. True (T) or False (F):

1. Algorithms are a series of steps we follow to accomplish a task. ()
2. A search engine's algorithm depends on the words you type. ()
3. Clarity and precision are not important in writing algorithms. ()
4. An algorithm should always produce at least one output. ()
5. Digital maps do not use any databases to show directions. ()
6. Each step in an algorithm must be executable in practice. ()
7. The addition algorithm starts by displaying the result first. ()
8. Finiteness is a key characteristic of any successful algorithm. ()

II. Complete the following:

1. When you type in a search engine, you are providing _____.
(A) Results (B) Keywords (C) Outputs (D) Finished tasks
2. The characteristic that ensures an algorithm is practical is _____.
(A) Clarity (B) Effectiveness (C) Finiteness (D) Complexity
3. An algorithm is a sequence of _____ steps.
(A) Disorganized (B) Organized (C) Random (D) Hidden
4. Computers use _____ to perform tasks like searching the internet.
(A) Papers (B) Algorithms (C) Pencils (D) Files
5. To calculate $A + B$, the algorithm needs A and B as _____.
(A) Outputs (B) Inputs (C) Conclusions (D) Results
6. If a search engine can't find what you want, you may need better _____.
(A) Keywords (B) Keyboards (C) Screens (D) Cables
7. A _____ number of steps means the algorithm will eventually stop.
(A) Huge (B) Finite (C) Infinite (D) Zero

Lesson 4: Programming – Computer Language and Game Making

Can you imagine talking to a computer? Programming is the language of computers, and it is like writing a very large food recipe. It consists of writing multiple algorithms to create a complete program.

Definition of Algorithms in Programming:

Algorithms are the instructions and steps that tell the computer exactly what to do, such as:

- Steps to solve a math problem.
- The way to prepare a falafel sandwich.

Programming in the World of Technology:

Programming is involved in most things we use daily:

1. **Entertainment:** Animated films, movies, and online video games are created using programming.
2. **Creativity:** You can innovate animations and games using Coding.
3. **Smart Devices:** Computers and apps use algorithms as the foundation of programming to perform specific tasks.

Computational Thinking and Problem Solving:

Programming teaches you how to think logically to solve problems. When you program, you provide detailed instructions to the computer.

Example: Solving a Maze Programming requires thinking in sequential steps to allow the computer to navigate a maze. *Example of programming instructions:*

1. Move two steps up.
2. Turn one step to the left.
3. And so on...

Helpful Tools:

There are many websites that help you learn programming, such as code.org.

I. True (T) or False (F): [8 Questions]

1. Programming is considered the language that computers understand. ()
2. An algorithm in programming is like a food recipe for the computer. ()
3. Video games are created without using any programming codes. ()
4. Programming helps you learn how to think logically. ()
5. You can only use programming for solving math problems. ()
6. Code.org is a website that helps students learn programming. ()
7. Coding is used to create animations and movies. ()
8. Computers don't need detailed instructions to perform tasks. ()

II. Complete the following: [7 Questions]

1. _____ is the process of writing algorithms to create a complete program. (A) Drawing (B) Programming (C) Printing (D) Scanning
2. To solve a maze, the computer needs _____ instructions.
(A) Vague (B) Random (C) Sequential (D) Wrong
3. You can learn coding through websites like _____.
(A) Facebook (B) Code.org (C) YouTube (D) Wikipedia
4. The instructions that tell the computer what to do are called _____.
(A) Algorithms (B) Screens (C) Keyboards (D) Batteries
5. Programming is used in entertainment to create _____.
(A) Paper books (B) Video games (C) Wooden toys (D) Pencils
6. Writing programming code is also known as _____.
(A) Coding (B) Typing (C) Painting (D) Chatting
7. Smart devices use _____ as a foundation for their programming.
(A) Games (B) Algorithms (C) Movies (D) Images

I. True (T) or False (F): [8 Questions]

1. Solving a maze requires a sequence of specific steps. ()
2. Programming is not used in the making of animated films. ()
3. An algorithm is a set of instructions that the computer follows. ()
4. Logic is a key part of computational thinking. ()
5. Code.org is a site used for social media and chatting only. ()
6. Most smart devices depend on programming to work. ()
7. Programming instructions must be very detailed and clear. ()
8. You cannot be creative if you use programming. ()

II. Complete the following: [7 Questions]

1. Programming is similar to writing a _____ for the computer.
(A) Recipe (B) Song (C) Letter (D) Poem
2. We use _____ to create apps and programs.
(A) Hammers (B) Coding (C) Pencils (D) Brushes
3. To tell a computer to "move left," you are using an _____.
(A) Image (B) Algorithm (C) Email (D) Sound
4. One of the goals of learning programming is solving _____.
(A) Problems (B) Hobbies (C) Dreams (D) Sports
5. Movies and animations are examples of programming in _____.
(A) Medicine (B) Agriculture (C) Entertainment (D) Fishing
6. The website _____ is a great tool for beginners in coding.
(A) Google (B) Code.org (C) Amazon (D) Twitter
7. Programming is the _____ used to talk to computers.
(A) Sound (B) Language (C) Tool (D) Hardware

I. True (T) or False (F): [8 Questions]

1. Programming consists of many algorithms combined together. ()
2. You can use coding to build your own online games. ()
3. Computers can think for themselves without any programming. ()
4. Logical thinking is developed through learning programming. ()
5. A recipe for a sandwich is a real-life example of an algorithm. ()
6. You only need one step to program a complex game. ()
7. Programming is involved in creating smart phone applications. ()
8. Detailed instructions are necessary for a computer to navigate a maze. ()

II. Complete the following: [7 Questions]

1. Instructions like "move two steps up" are part of a _____.
(A) Programming code (B) Physical exercise (C) Paper map (D) Phone call
2. To create a digital program, you must write _____.
(A) Stories (B) Algorithms (C) Letters (D) News
3. Programming is a way to express _____ by making movies and games. (A) Creativity (B) Boredom (C) Anger (D) Sleepiness
4. Computers follow algorithms to perform _____ tasks.
(A) Random (B) Specific (C) Impossible (D) Unknown
5. Solving problems _____ is a skill learned from programming.
(A) Logically (B) Randomly (C) Quickly (D) Roughly
6. Writing a program is like creating a large _____ of instructions.
(A) Book (B) Collection (C) Drawing (D) File
7. If you want to move a character in a game, you need _____.
(A) Magic (B) Coding (C) Luck (D) A printer

Lesson 5: Exploring Scratch (استكشاف برنامج سكراتش)

Imagine you are an orchestra conductor, and the instruments are your characters on the screen. You decide when they move, speak, or sing!

Programming Apps for Kids:

1. Scratch: Designed specifically for children to turn ideas into interactive stories and games using "Block Programming."
2. Tynker: An educational environment for learning basics. It starts with blocks and moves to text languages like Python and JavaScript.
3. Blockly: An open-source visual language. Users snap blocks together to solve puzzles.

How Scratch Works:

- **Blocks (اللبات):** Colored blocks representing ready-made commands (Move, Say, Play Sound).
- **Scripts (المقاطع البرمجية):** A group of blocks connected together to give orders to a character.
- **Interface Parts:**
 - **Stage (المنصة):** Where the project is displayed and characters move.
 - **Blocks Palette (منطقة اللبات):** The library containing all colored commands.
 - **Scripts Area (منطقة المقاطع):** The workspace where you drag and snap blocks.
 - **Sprite (الكائن):** The character on the screen (like the famous Scratch Cat).

I. True (T) or False (F): [8 Questions]

1. Scratch is a programming language designed specifically for adults. ()
2. Tynker uses blocks and also supports languages like Python. ()
3. The "Stage" is the area where you drag and snap blocks together. ()
4. A "Sprite" is the character that receives commands in Scratch. ()
5. You can only use Scratch if you have an active internet connection. ()
6. Blockly is an open-source visual programming language. ()
7. Colored blocks in Scratch represent ready-made commands. ()
8. To start a project, you often use the "When Green Flag Clicked" block. ()

II. Complete the following: [7 Questions]

1. The _____ is the screen where your final project is displayed.
(A) Blocks Palette (B) Stage (C) Scripts Area (D) Sprite
2. A group of blocks connected together is called a _____.
(A) Sprite (B) Stage (C) Script (D) Library
3. To make a character move, you drag blocks from the _____ section.
(A) Sound (B) Events (C) Motion (D) Looks
4. ____ is a website that helps kids learn programming through puzzles.
(A) Facebook (B) Blockly Games (C) WhatsApp (D) YouTube
5. The default character in Scratch is often a _____.
(A) Dog (B) Cat (C) Bird (D) Fish
6. Commands like "Move" or "Say" are represented by colored _____.
(A) Blocks (B) Lines (C) Circles (D) Points
7. You can find the "When Clicked" command in the _____ palette.
(A) Motion (B) Events (C) Sound (D) Sensing

I. True (T) or False (F): [8 Questions]

1. The "Scripts Area" is the workspace for building your code. ()
2. You can turn your ideas into interactive games using Scratch. ()
3. "Move 10 steps" is found in the Sound category. ()
4. Tynker only teaches block programming and nothing else. ()
5. You can download Scratch to work on it without the internet. ()
6. The Green Flag is used to start the execution of your script. ()
7. In Scratch, you have to type complex codes and symbols by hand. ()
8. Every colored block in Scratch represents a specific instruction. ()

II. Complete the following: [7 Questions]

1. _____ is the process of snapping blocks together like building pieces. (A) Drawing (B) Assembling (C) Deleting (D) Printing
2. The area that contains all the command categories is the _____.
(A) Stage (B) Blocks Palette (C) Sprite List (D) Menu Bar
3. To start learning coding with Python later, you might use _____.
(A) Tynker (B) Calculator (C) Notepad (D) Paint
4. The cat on the Scratch screen is called a _____.
(A) Script (B) Sprite (C) Block (D) Stage
5. To see the results of your work, you look at the _____.
(A) Scripts Area (B) Stage (C) Keyboard (D) Mouse
6. Scratch is an example of _____ programming.
(A) Text-based (B) Block-based (C) Silent (D) Paper
7. If you need to make the cat talk, you use the _____ blocks.
(A) Motion (B) Looks (C) Sensing (D) Control

I. True (T) or False (F): [8 Questions]

1. Blockly allows users to solve puzzles by dragging blocks. ()
2. The "Blocks Palette" is where the Sprite moves and interacts. ()
3. Scratch allows kids to create their own interactive stories. ()
4. You need to be a professional engineer to use Scratch. ()
5. "Events" blocks are used to determine when a script starts. ()
6. The Sprite's instructions are built in the "Scripts Area." ()
7. Tynker and Scratch both use a similar block interface. ()
8. You cannot change the number of steps in a "Move" block. ()

II. Complete the following: [7 Questions]

1. To run your program in Scratch, you click the _____.
(A) Red Button (B) Green Flag (C) Space Key (D) Mouse
2. Scratch and Tynker are tools for teaching kids _____.
(A) Cooking (B) Programming (C) Swimming (D) History
3. A character like a cat or a ball in Scratch is known as a _____.
(A) Goal (B) Sprite (C) Block (D) Background
4. To find the "Move 10 steps" block, look in the _____ category.
(A) Events (B) Motion (C) Looks (D) Sound
5. The _____ is the large white area where code blocks are snapped. (A) Scripts Area (B) Stage (C) Blocks Palette (D) Toolbar
6. Programming in Scratch is easy because it uses _____ instead of typing. (A) Pens (B) Visual Blocks (C) Voice (D) Videos
7. When you connect blocks together, you are creating a _____.
(A) Photo (B) Script (C) Song (D) Folder

حمل الآن

مجاناً وحصرياً

المراجعة رقم (3)

اختبار شهر ابريل



Lesson 1: Solving Digital Problems.

Just like in our daily lives, we may encounter small or large problems when using technology. Sometimes solving a problem seems difficult, but by taking organized steps, it becomes much easier!



1. Steps for Problem Solving

Solving technical problems requires logical thinking steps.

Step	What to do?	Why?
1. Build a Hypothesis	Make a scientific guess (a preliminary explanation) about how the problem occurred.	This guess is called a " Hypothesis ." It is the starting point you can test.
2. Test the Hypothesis	Test your guess, but do not take risks with anything that might put your device in danger.	Testing must be safe and well-thought-out.
3. Learn from Error	If your test fails, think: What went wrong? What did you learn?	We learn from our mistakes to build a new, more accurate hypothesis.

2. Breaking Down Problems into Small Parts

Some tech problems may seem complex, such as an internet connection failure or an app that won't open.

- **The Main Idea:** Divide the large problem into small parts, then solve each part gradually.
- **Real-life Example:** If you have a big task like "Organizing a class trip," it seems hard. But when you break it down into small tasks (choose the destination, set a date, ask for the price), it becomes much easier! This is the same principle we follow for major technical issues.
- **When Dividing a Tech Problem:** Start by solving the parts you can handle on your own, step by step, until the major problem is resolved.

3. Asking for Help

If a technical problem is too complex, never hesitate to ask for help:

1. **The Teacher is your source:** You can ask your teacher for help. At first, a task may seem huge, but asking for help will make dividing the problem into small tasks easier.
2. **Teamwork for Large Tasks:** If you have a group of people helping you, you can assign a small part to each person to solve separately.

Practical Application

Dear Student: Think of a problem you might face while using your device (Computer, Mobile Phone...) and how to solve it by applying the "Problem Breakdown" and "Hypothesis" methodology:

- **Build a Hypothesis (Guess):** Write one guess about the cause of the problem.
- **Divide the Problem:** Write two small steps you can take to solve the problem.

Exercises on Lesson

Q1: Put (✓) or (✗):

- 1- Information and Communication Technology (ICT) problems seem easier when we break them down into small parts. ()
- 2- A hypothesis is the final and confirmed solution to how a problem occurred. ()
- 3- You should always try to solve technical problems by yourself without asking for help. ()
- 4- The problem-breakdown methodology can be applied to real-world problems, not just technology problems. ()
- 5- Testing a hypothesis should not involve any risk to the device you are using. ()
- 6- The teacher is a source of help in organizing and facilitating large tasks and problems. ()
- 7- When a hypothesis test fails, you should feel frustrated and stop trying. ()
- 8- If you have a group helping you solve a problem, each person should solve a small part of it. ()
- 9- A hypothesis is a scientific guess about how things happen, and it can be tested. ()
- 10- You do not need to take steps to solve technical problems; the solution comes automatically. ()

Q2: Choose the correct answer:

A scientific guess about how a problem occurred is called:

- | | |
|------------------------|-----------------------|
| a. The final solution. | b. An experiment. |
| c. A Hypothesis. | d. A partial problem. |

2. When a technology problem is very complex, the best strategy to solve it is:

- | | |
|--|---|
| a. Ignore it and look for another problem. | b. Divide it into small parts and solve them gradually. |
| c. Start solving it without thinking. | d. Ask for help from a random person. |

3. The goal of testing a hypothesis is to:

- | | |
|--------------------------------------|---|
| a. Prove that you were always right. | b. Find out if the hypothesis failed to learn from the error. |
| c. Put the device at risk. | d. Make the problem larger. |

4. When we have a large task at the beginning, how do we make it easier?

- | | |
|---|--|
| a. Leave it as it is. | b. Divide it into several small tasks. |
| c. Ask someone else to solve it completely. | d. Distract attention away from it. |

5. If your hypothesis test fails, what is the most important thing to learn?

- | | |
|--|------------------------------------|
| a. Not to build hypotheses ever again. | b. That you cannot solve problems. |
| c. What went wrong and how that helps you build a better hypothesis. | d. That the problem is unsolvable. |

6. What action should be avoided when testing your hypothesis?

- | | |
|-------------------------------|---|
| a. Building a new hypothesis. | b. Applying any test that might put the device in danger. |
| c. Dividing the problem. | d. Asking the teacher for help. |

7. In a task like organizing a trip, "choosing the destination" represents:

- | | |
|--|-----------------------|
| a. The hypothesis. | b. The major problem. |
| c. A small, divided part of the problem. | d. The final step. |

8. What should you do when facing a complex technology problem?

- | | |
|--------------------------------------|--|
| a. Try to solve it by yourself only. | b. Ask for help from your teacher or a specialist. |
| c. Give up on the problem. | d. Play games on the computer. |

9. When a group of people works on solving a large problem, how can the work be organized?

- | | |
|-------------------------------------|--|
| a. Everyone works on the same part. | b. Assigning a small part to each individual to solve. |
| c. No one participates. | d. One person solves everything. |

10. Solving problems requires:

- | | |
|------------------|--|
| a. Randomness. | b. Taking steps to think about and solve them. |
| c. Wasting time. | d. Reading novels. |

Lesson 2: Presenting Information.

When we want to present information or advertise an idea in an attractive way, we use digital tools to design posters or billboards. Let's learn about the tools and the rules of good design!

1. Digital Tools for Presenting Information

The **Microsoft 365** suite offers excellent options for designing posters and billboards:

- **PowerPoint:** Great for designing presentation slides quickly and easily.
- **Word:** Primarily used for writing text, but can also be used to design simple posters.
- **Publisher:** A professional program specifically for designing organized posters, newsletters, and advertisements.

Note: To access these programs, you must have the Microsoft 365 suite installed on your digital device. Ensure your device is updated to download and run the software properly.

2. Digital Concepts to Consider When Designing

To make your poster attractive and easy to read, you must consider these four key elements:

Concept	What does it mean?	Designer's Tip
Margins	The empty space around the edges of the poster or billboard.	Leave a consistent margin (e.g., 2.5 cm). If the edges are too full, the design will look crowded and unattractive.
Font Type & Size	How the text looks and how big it is so your audience can read it.	Simplicity is best. Avoid complex fonts that distract the viewer and are hard to read.
Colors	The palette used to deliver your message and catch the eye.	It is best to use no more than three colors in one poster. Always consider the background color when choosing your font color (use contrast).
Images	The visuals used to match and support your content.	Use clear, high-quality images that are directly relevant to your topic.

Practical Application:

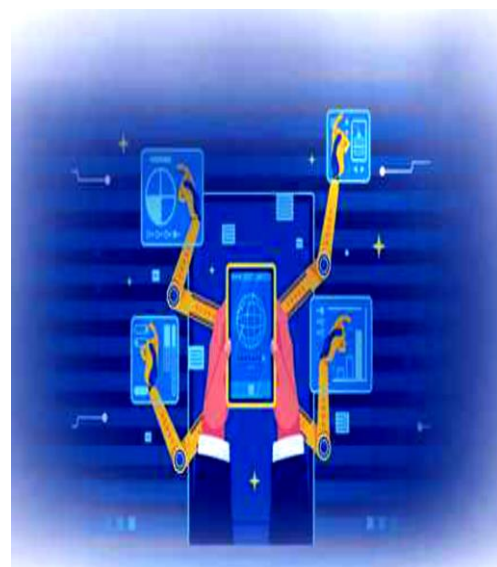
Dear Student: Design a digital poster about one of the following topics:

1. The Grand Egyptian Museum.
2. The importance of conserving resources.
3. Protecting the environment.

Instructions:

- Pay close attention to **Margins** (empty spaces).
- Focus on making the billboard organized and beautiful

by applying the tips above.



Exercises on Lesson

Q1: Put (✓) or (✗):

- 1- Margins are the empty space left around the edges of a poster. ()
- 2- **Microsoft Publisher** is the best tool for designing professional posters. ()
- 3- It is preferable to use more than five colors in a design to make it attractive. ()
- 4- Choosing a complex font helps your audience read the information easily. ()
- 5- Images used in a poster must match the content and be of high quality. ()
- 6- To access the **Microsoft 365** suite, you need an updated digital device. ()
- 7- If the content is very close to the edges, the poster will look visually attractive. ()
- 8- Word processing software (**Word**) can also be used to design posters. ()
- 9- We do not need to pay attention to the background color when choosing the font color. ()
- 10- Images in a poster should be blurry to encourage the viewer to focus on the text. ()

Q2: Choose the correct answer:

1-Which tool is considered the best for designing a professional digital poster or billboard?

- a. Word Processor (Word).
- b. Presentation Software (PowerPoint).
- c. Desktop Publishing Software (Publisher).
- d. Mobile phone application.

2. What do we call the empty space left around the edges of a poster?

- a. Background.
- b. Colors.
- c. Margins.
- d. Font type.

3. What is the maximum number of colors recommended for use in a single poster?

- a. Five colors.
- b. Less than three colors.
- c. Ten colors.
- d. One color only.

4. If the font you use in a poster is complex, it:

- a. Catches the eye strongly.
- b. Distracts the viewer and is difficult to read.
- c. Increases the image quality.
- d. Makes it easier for the audience to read information.

5. When using images in billboards, it is important that the images are:

- a. Blurry.
- b. Irrelevant to the content.
- c. Clear, high-quality, and relevant to the topic.
- d. Full of a lot of text.

6. Word processing software (Word) is part of which software suite?

- a. Google Drive.
- b. Microsoft 365.
- c. Adobe Suite.
- d. Vlab.

7. What is the visual drawback of adding content too close to the edges of the poster?

- a. The poster will look well-designed.
- b. The poster will look crowded and lack margins.
- c. It will increase the quality of the poster.
- d. It will make reading easier.

8. What should you ensure about your computer before downloading Microsoft 365?

- a. That it is very old.
- b. That it is not connected to the internet.
- c. That it is updated to handle the software being downloaded.
- d. That its font is very small.

9. When choosing colors, you must take into account the color of the:

- a. Computer device.
- b. Font type only.
- c. Background.
- d. Mouse.

10. In design, choosing a font that achieves _____ is generally preferred:

- a. Complexity.
- b. Ambiguity.
- c. Simplicity.
- d. Excessive detail.

Lesson 3: Algorithms.

Did you know that everything you do in your day is a series of steps? This series is called an **Algorithm**.

An algorithm is a finite set of clear instructions and sequential, organized steps used to solve a specific problem or complete a specific task.

Illustrative Example: Algorithm for Adding Two Numbers

1. **Start.**
2. Enter the first number (A).
3. Enter the second number (B).
4. Calculate the sum: $C = A + B$.
5. Display the result (C).
6. **End.**



Essential Characteristics of an Algorithm

A good algorithm must have the following properties:

1. **Definiteness (Clarity and Precision):** Every step must be clear and unambiguous.
2. **Input:** It must accept zero or more inputs.
3. **Output:** It must produce at least one output that represents the solution.
4. **Finiteness:** The algorithm must stop after a finite number of steps.
5. **Effectiveness:** Every step must be practically executable.

Algorithms and Search Engines

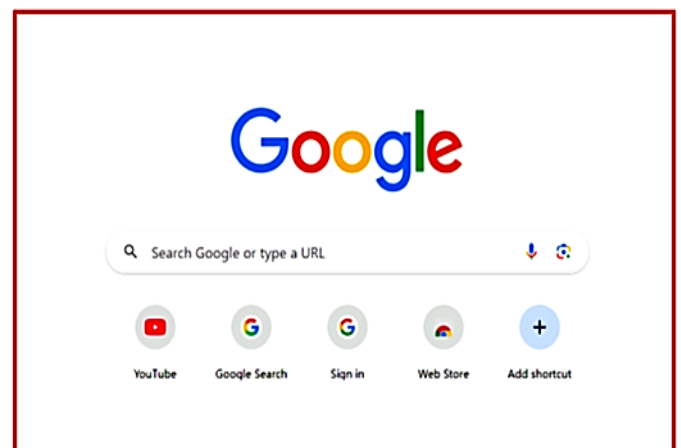
Computers and applications use algorithms to perform specific tasks, such as search engines:

- **Keywords:** Every time you enter keywords into a search engine, the engine uses algorithms to provide you with results.
- **Function of the Algorithm:** Algorithms help determine the results most relevant to your research topic.
- **Smart Algorithms:** For example, if you use a search engine to find directions to a place, the engine uses a database of names and information from digital maps to provide you with results.
- **Search Accuracy:** It is very important to choose the right words when collecting information. If your phrasing is not precise enough, the engine's algorithm might not be perfectly accurate in providing results.

Practical Application:

Dear Student: Write the algorithmic steps to calculate the sum of **three numbers** (you may work in groups).

1. **Start.**
2. Enter the first number (A).
3. Enter the second number (B).
4. Enter the third number (C).
5. Calculate the sum: $Sum = A + B + C$.
6. Display the result (Sum).
7. **End.**



Exercises on Lesson

Q1: Put (✓) or (✗):

- 1- An algorithm represents a series of steps that explain how to perform a task. ()
- 2- Algorithms help determine search engine results that are the least relevant to your search topic. ()
- 3- Following a food recipe is considered a type of algorithm. ()
- 4- There is no need to choose the correct words when searching; the engine will always find the results. ()
- 5- An algorithm for solving a math problem requires breaking the question into parts. ()
- 6- When cleaning a room, you can start by cleaning the floor before dusting the surfaces. ()
- 7- When entering inaccurate keywords, the engine's algorithm remains highly accurate in all cases. ()
- 8- Search engines use map databases to provide you with directions to a specific place. ()
- 9- An algorithm is a set of random instructions. ()
- 10- Computers and their applications use algorithms to decorate the desktop. ()

Q2: Choose the correct answer:

1. What is the name of the series of steps that explains how to perform a specific task?

- | | |
|---------------|----------------------|
| a. Keyword. | b. Digital research. |
| c. Algorithm. | d. Database. |

2. What does a search engine use to determine the results most relevant to your research topic?

- | | |
|------------------|---------------------|
| a. Food recipes. | b. Spelling errors. |
| c. Algorithms. | d. Images only. |

3. When solving a verbal math problem, it often requires:

- | | |
|---------------------------|--|
| a. Ignoring the question. | b. Dividing the question into parts and solving it in a series of steps. |
| c. Using only one word. | d. Asking for help without trying. |

4. If you use a search engine to find directions to a place, the engine will use:

- | | |
|-------------------------|---|
| a. Your personal files. | b. A database of names and information found on digital maps. |
| c. Math questions. | d. Food recipes. |

5. What should you do to tell a search engine which task you want it to perform?

- | | |
|---------------------------|--------------------|
| a. Turn off the computer. | b. Enter keywords. |
| c. Clean your room. | d. Prepare a meal. |

6. What happens if the phrasing of keywords is not precise enough?

- | | |
|---|------------------------------------|
| a. The engine's algorithm remains very accurate. | b. The room gets better organized. |
| c. The engine's algorithm might not be perfectly accurate in providing results. | d. Devices stop working. |

7. A recipe for preparing a meal (like a falafel sandwich) is an example of:

- | | |
|-----------------------|-----------------------------------|
| a. A complex problem. | b. A type of algorithm. |
| c. A random result. | d. A random, unorganized process. |

8. What must you choose carefully when trying to collect information?

- | | |
|----------------------|---|
| a. Background color. | b. The correct words you are searching for. |
| c. Bedtime. | d. Furniture in the room. |

9. What is a logical first step in an algorithm for cleaning a room?

- | | |
|---------------------|-----------------------|
| a. Clean the floor. | b. Dust the surfaces. |
| c. Mop the floor. | d. Leave the room. |

10. Computers and their applications use algorithms to:

- | | |
|---------------------|-----------------------------------|
| a. Decorate a room. | b. Perform specific tasks. |
| c. Cook food. | d. Send unwanted messages (Spam). |

Lesson 4: Lesson 4: Programming – Computer Language and Game Development.

Hello friends! Can you imagine being able to speak the computer's language? This language is called **Coding**, and it is like writing a very large recipe!

- **Programming:** It is the process of writing multiple algorithms to create a complete program.
- **Algorithms:** These are the instructions and steps that tell the computer exactly what to do, just like the steps for solving a math problem.



Programming in the Tech World

Look around and think about the things you use every day:

- **Entertainment:** All the animations and movies you've watched, and the video games you've played online, were created and designed using programming.
- **Creativity:** You too can create your own animations, movies, and video games using **Coding**.
- **Smart Devices:** Computers and applications use algorithms (which are the foundation of programming) to perform specific tasks.

Computational Thinking and Problem Solving

Programming teaches you how to think logically to solve problems. When you code, you provide detailed instructions to the computer:

- **Solving a Maze:** Have you ever tried to solve a maze? Programming requires you to think in sequential steps that allow the computer to navigate through that maze.
- **Example:** When solving a maze, the programming instructions look like: "Move two steps up," "Turn one step to the left," and so on.
- **Helpful Tools:** There are many websites that help you learn programming, such as **Code.org**.

Practical Application:

Dear Student: Explore the **Code.org** website to start learning how to code (you can ask your teacher for help).

Exercises on Lesson

Q1: Put (✓) or (✗):

1. Programming (Coding) consists of writing multiple algorithms to create a complete program. ()
2. Movies and animations were not created using programming. ()
3. Algorithms are the foundation of programming and serve as instructions for the computer. ()
4. You can create video games using programming code. ()
5. The website **Code.org** is an example of a site that helps you learn programming. ()
6. Programming cannot be used to solve mazes or problems that require sequential steps. ()
7. When solving a math problem, you are using algorithms. ()
8. When you program, you are providing detailed instructions to the computer program. ()
9. Programming does not help us think logically to solve problems. ()
10. Programming is a very difficult language and children cannot learn it. ()

Q2: Choose the correct answer:

1. What is the process of writing multiple algorithms to create a complete program called?

- a. Calculation.
- b. Programming (Coding).
- c. Cleaning.
- d. Planning.

2. What has been created using programming?

- a. Food recipes only.
- b. Animations, movies, and online video games.
- c. Falafel patties.
- d. Home furniture.

3. Programming helps us learn an important strategy for solving:

- a. Random puzzles.
- b. Food recipes.
- c. Problems.
- d. Unsolvables mazes.

4. What are the instructions and steps that tell the computer what to do called?

- a. Helper programs.
- b. Computer language.
- c. Algorithms.
- d. Secret code.

5. Which website can help you learn how to code?

- a. Facebook.
- b. Code.org.
- c. Google Maps.
- d. Microsoft Word.

6. When solving a maze, programming requires thinking about:

- a. Random paths.
- b. Sequential steps to pass through the maze.
- c. Exiting without following steps.
- d. Turning off the computer.

7. What does the term "Coding" mean?

- a. Reading.
- b. Handwriting.
- c. Programming.
- d. Coloring.

8. When computers use algorithms, they perform:

- a. Any task.
- b. Specific tasks.
- c. Random movements.
- d. Sleeping.

9. What must you provide to a computer program to solve a maze?

- a. Personal notes.
- b. Images from the internet.
- c. Instructions (guidelines) on how to solve it.
- d. Food recipes.

10. Programming is the computer's language that enables us to:

- a. Destroy games.
- b. Innovate and create games and movies.
- c. Disable devices.
- d. Send emails only.

Lesson 5: Exploring the Scratch Program

Are you ready to be a programmer? Imagine you are an orchestra conductor, and the instruments are your characters on the screen. You decide when they move, when they speak, and when they sing! Many

applications use the **Block-Based Coding** style, especially for teaching children.



. Famous Block-Based Platforms

1- **Scratch:** A programming language designed specifically for your age. Its mission is to turn ideas into interactive stories and games with extreme ease.

2- **Tynker:** 

A learning environment for youngsters to teach the basics of programming. It offers a wide range of projects and classrooms. It starts with block-based coding and then transitions to real text-based languages like **Python** and **JavaScript**.

○ Website: <https://www.tynker.com>

3- **Blockly:** 

An open-source visual programming language. The user assembles coding blocks together to solve puzzles and complete tasks. It can be integrated with other languages like Python.

○ Games Link: <https://blockly.games>

2. Let's Explore Scratch

How Scratch Works

Scratch relies on a system of **Blocks** instead of writing difficult symbols and words.

1. **Blocks are Commands:** Each colored block represents a ready-made command, such as: "Move," "Say," or "Play Sound."
2. **Assembly:** You drag these blocks and snap them together, just like connecting colorful building bricks to create a complete structure.
3. **Scripts:** A group of blocks connected together is called a **Script**. The script provides instructions to the **Sprite** (the character or shape on the screen).

3. How to Start Scratch

You can start using Scratch easily in two ways:

1. **Online:** Go to the official Scratch website: [Scratch Editor](https://scratch.mit.edu/projects/editor/?tutorial=getStarted).

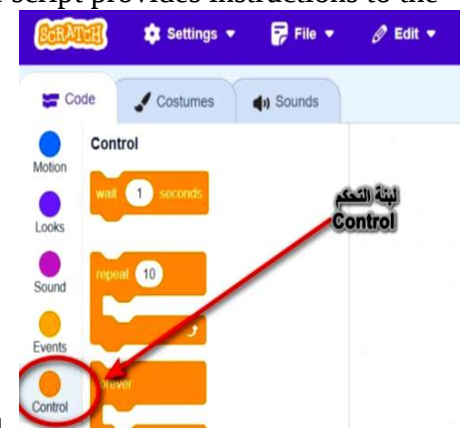
You can ask your teacher for help.

<https://scratch.mit.edu/projects/editor/?tutorial=getStarted>

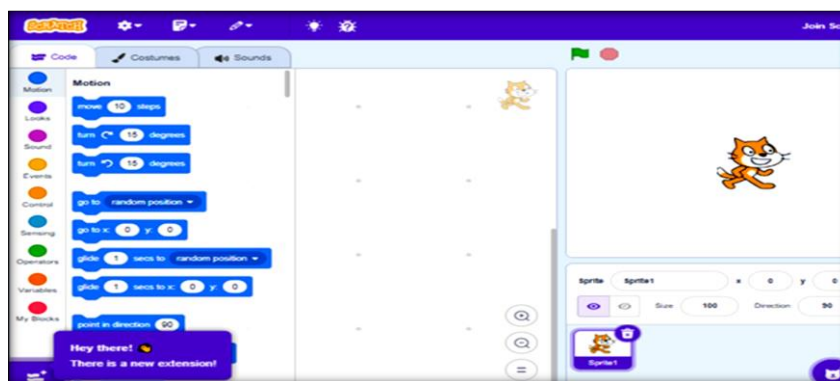
2- **Download:** You can download the application to your computer to work offline without needing the internet.

Practical Application:

Dear Student: Open the Scratch editor and try to drag a "Move" block and a "Say Hello" block. Snap them together and click on them to see what your **Sprite** does!



Sections of the Scratch Interface

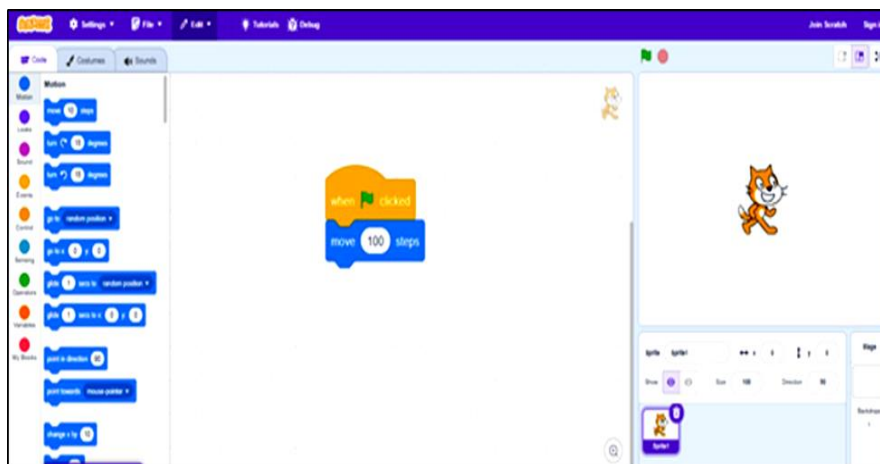


When you open the program, you will find the screen divided into three main sections that help you build your project:

No.	Section Name	Function
1	Stage	This is the display screen! It is the place where your final project appears. Sprites move and interact here.
2	Blocks Palette	This is the library that contains all the colored commands (Motion, Looks, Sound, etc.).
3	Scripts Area	This is your workspace! Here you drag blocks and snap them together to form commands.

The Default Sprite: The first character you see in Scratch is the **Scratch Cat Sprite**. He is ready and waiting for your commands!

Time to Work! Let's Apply Basic Commands



Exercise 1: Basic Motion

Goal: Make the cat move 100 steps when the start button is clicked.

1. **Starting:** From the **Events** category (yellow), drag the block "when green flag clicked".
2. **The Command:** From the **Motion** category (blue), drag the block "move 10 steps". Change the number to **100** and snap it under the start block.
3. **Run:** Click the green flag above the stage and watch the cat move!

Practical Application:

Dear Student: Add **Speech** and **Sound** using block programming in Scratch.

Follow these steps:

1. **To Speak:** Go to the **Looks** category (purple) and drag the block "say Hello! for 2 seconds". Snap it under your motion blocks.
2. **To Add Sound:** Go to the **Sound** category (pink) and drag the block "play sound Meow until done". Snap it into your script.
3. Click the **Green Flag** and see how your cat moves, talks, and makes a sound all at once!

Exercises on Lesson

Q1: Put (✓) or (✗):

1. Scratch uses text-based programming like Python. ()
2. Blocks in Scratch help students program without writing code. ()
3. A sprite in Scratch can move, speak, and make sounds. ()
4. It is not possible to change the appearance of a sprite in Scratch. ()
5. Tynker does not support the JavaScript language. ()
6. The Blocks Palette contains ready-made commands. ()
7. The Stage is the area where we build the programming blocks. ()
8. A Scratch project can be started by clicking the green flag. ()
9. New sounds cannot be added in Scratch. ()
10. Scratch is suitable for children learning to program. ()

Q2: Choose the correct answer:

1. What is the basic system that Scratch relies on instead of writing difficult text-based codes?

- | | |
|----------------------------------|---------------------------------|
| a. Complex Cipher System. | b. Block-Based System (Blocks). |
| c. Mathematical Equation System. | d. Drop-down Menu System. |

2. Which of the following sections in the Scratch interface is where your final project result appears (the display screen)?

- | | |
|------------------|---------------------|
| a. Scripts Area. | b. Blocks Palette. |
| c. The Stage. | d. Sprites Library. |

3. What is the term for a group of blocks connected together that give commands to a Sprite?

- | | |
|----------------|-----------------|
| a. The Sprite. | b. The Block. |
| c. The Script. | d. The Command. |

4. Sound commands are found in the _____ area?

- | | |
|--------------------|-------------|
| a. Stage. | b. Scripts. |
| c. Blocks Palette. | d. Display. |

5. Which of the following block-based programming applications also supports text languages like Python and JavaScript?

- | | |
|------------------------|-------------|
| a. Scratch. | b. Tynker. |
| c. Daisy the Dinosaur. | d. Blockly. |

6. In which block category can you find the "move 100 steps" block?

- | | |
|---------------------|-------------------|
| a. Events (Yellow). | b. Motion (Blue). |
| c. Looks (Purple). | d. Sound (Pink). |

7. What is the default sprite (the first character) that appears when opening Scratch?

- | | |
|---------------------|--------------|
| a. A soccer ball. | b. A wizard. |
| c. The Scratch Cat. | d. A horse. |

8. Which block category contains the "when green flag clicked" block, which represents the starting block?

- | | |
|--------------------|----------------------|
| a. Looks category. | b. Control category. |
| c. Sound category. | d. Events category. |

9. What is the purpose of adding "move 20 steps"?

- | | |
|-------------------------------------|------------------------------------|
| a. To repeat the movement twice. | b. To move the sprite by 20 steps. |
| c. To make the sprite play a sound. | d. To make the sprite say hello. |

10. Which of these applications is considered an open-source visual programming language that can be integrated with other languages like Python?

- | | |
|------------------------|-------------|
| a. Movie Maker. | b. Blockly. |
| c. Daisy the Dinosaur. | d. Paint. |

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

